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place it. Both species grow on limestone or sandstone rocks, in moist shady hollows or caves, and both are liable to be overlooked, being very minute, only two or three millimeters high. The manual gives only two North American stations for *Anodus Donianus*, one at Little Falls, N. Y., Peck; the other at Owen Sound, Canada, J. Macoun; but Austin also found it at Sparta, N. J., and Wilson Harris discovered two stations for it at Chilson Lake, Essex Co., N. Y., where it grows mixed with a blue-green alga, which is densely coated with lime, and covers the surface of the rock with a gray-green growth, readily mistaken for a lichen. Associated with them were some scattered plants of *Myurella Careyana*, *Gymnostomum rupestre* and *Leptobryum pyiforme*; the bright green leaves of *Seligeria* stood up among the grey-green alga filaments. The hemispherical or turbinate capsules are less than one-half a millimeter in length, and the pedicels seldom more than 2 mm., so that the description in the manual is somewhat misleading. They do not mature until late in summer; antheridia and archegonia were found on August 31st, 1900, and no capsules had developed on June 15th, 1901.

ELIZABETH G. BRITTON.

The two stations for *Seligeria Doniana* on Chilson Lake, referred to above by Mrs. Britton would be easily overlooked as the geologic formation is Laurentian, and one would not be prepared for the thin band of calciferous rock with an outcrop on the Island and another some mile further east in the Devil's Basin. This formation is a mixture of fine yellow silicious sand and magnesian carbonate of lime, which has a fine sparkling grain when fractured.

A specimen of the collection made June 15th, 1901, was sent to Prof. Bruce Finck, of Drake University, Iowa, to determine if possible the associated gray-green alga or lichen. He writes to Mrs. Harris, under date July 6th, 1901: "I found some young adult shoots of some moss but neither protonemata, fungus or lichen. I am not sure that protonemata are not present as I examined only low slide. The specimen is an alga near *Oscillaria*. I found numerous filaments with fine sheaths and occasional hormogones."

The specimens obtained August 31st, 1900, were on less weathered rock and were not associated with such a thick felt of alga or protonemata; the plants were more distinct.

ANNIE MORRILL SMITH.

PSEUDOCALIERGON Ren., A NEW SUBGENUS OF HYPNUM.

By F. RENAULD.

Translated by JOHN M. HOLZINGER.

Plants inhabiting swampy regions, forming loose tufts, some of the species having the general aspect of certain *Harpidia*, others reminding one of certain species of *Caliergon*. Stem without radicles. Leaves imbricated or distant, more rarely homotropous, *obtusely acuminate*, a character which distinguishes them completely from the two related sub-

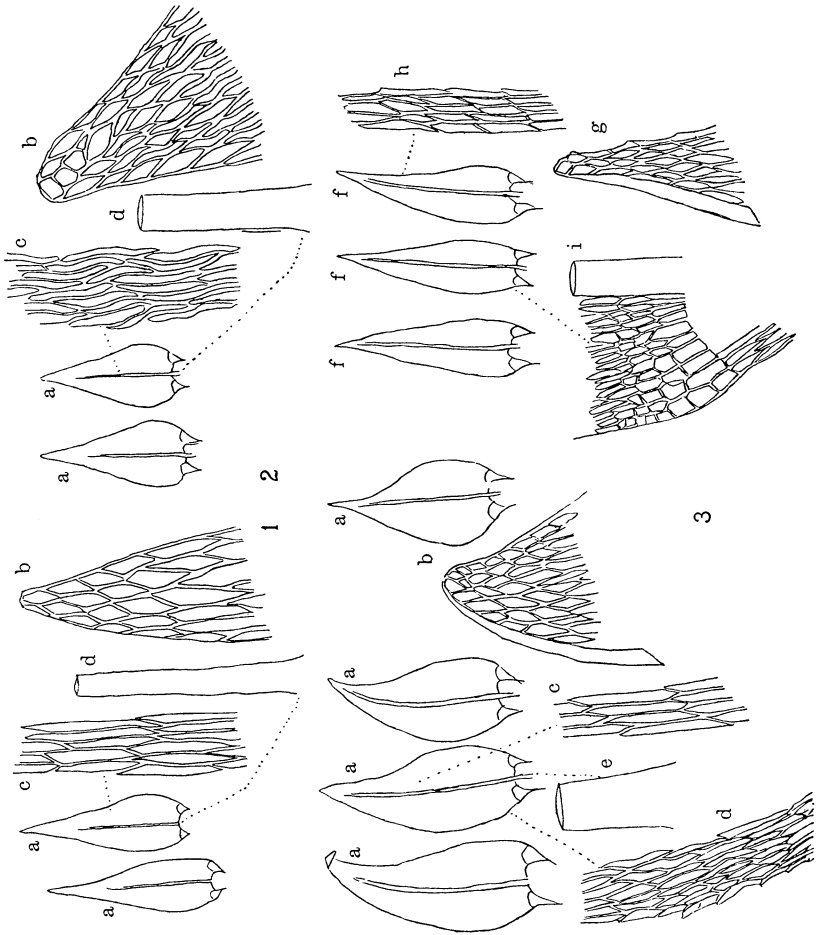


PLATE VII.

1.—*Hypnum pseudostramineum* C. Müll. a. Stem leaf x 16. b. Apex of leaf x 200. c. Middle cells x 200. d. Basal part of costa x 120.

2.—*Hypnum plesistramineum* Ren. a. Stem leaf x 16. b. Leaf apex x 200. c. Middle cells x 200. d. Basal part of costa x 120.

3.—*Hypnum Tundrae* Arnell a, a, a, a, Stem leaves x 16. b. Leaf apex x 200. c. Middle cells x 200. d. Marginal cells near base x 120. e. Basal part of costa x 120. f, f, f, Branch leaves x 16. g. Apex of branch leaf x 200. h. Marginal cells of same x 200. i. Auricles x 170.

genera, with a costa reaching or exceeding the middle of the leaf, but occasionally short and bifurcated; areolation close, cells linear, those of the apex short and enlarged, those of the angles hyaline and inflated, forming more or less well defined auricles.

At present this group comprises the four following species:

1. Stem pinnate, leaves strongly decurrent, lightly denticulate above the base, the branch leaves homotropous, auricles large, well defined,

H. Tundrae Arnell

1. Stem little branched or almost simple, leaves little decurrent, entire none homotropous, auricles ill defined.....2

2. Leaves spreading, distant, ovate-elliptical, contracted only toward the apex into a short, often inflexed acumen. *H. Bakeri* Ren.

2. Leaves gradually narrowed from the lower third into a straight, not inflexed acumen.....3

3. Leaves *loosely* imbricated, oblong-lanceolate, cells *straight* with *thin* walls..... *H. pseudostramineum* C. Müll.

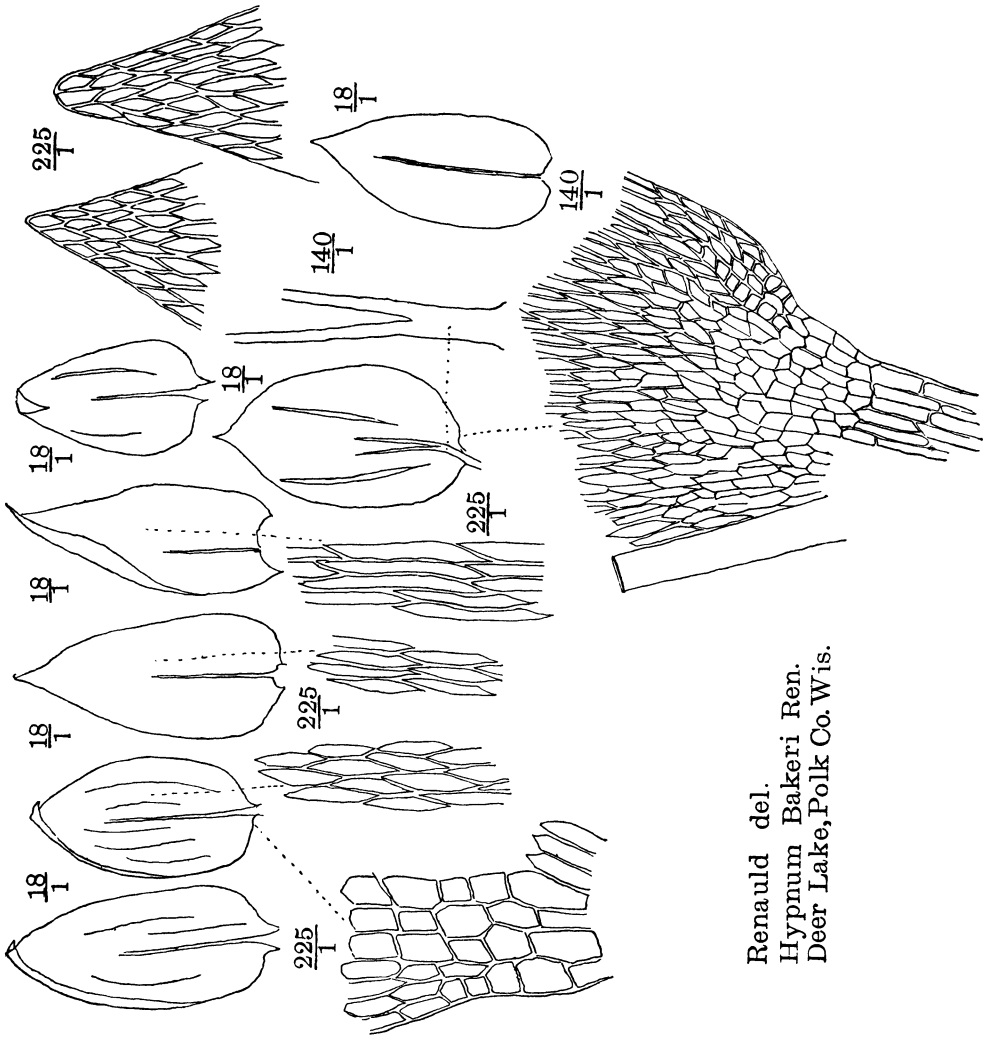
3. Leaves *densely* imbricated, oval-lanceolate, almost deltoid; cells *flexuous* with *dense* walls..... *H. plesistramineum* Ren.

H. PSEUDOSTRAMEUM C. Müll. A species very rare, and not well known, habitually confounded with various forms of *H. fluitans* (group amphibium) and of *H. aduncum* (groups Kneiffii and pseudofluitans) or referred as a variety to one or the other of these two species. I must in this connection rectify an error which I committed in the treatment of the *Harpidia* (*Muscologia Gallica*, Husnot), before I had been able to examine an authentic specimen of *H. pseudostramineum* C. Müll. I wrongly reduced this species to a synonym of *H. fluitans* var. *pseudostramineum* C. Müll. According to Dr. Sanio, Carl Müller has published in the *Bot. Zeitung* (1855) a description of *H. pseudostramineum* C. Müll. Schimper (Syn. ed. II. 736), who says he received from Hampe the original (type) specimen of C. Müller, places this plant in the subgenus *Harpidium*, with the remark: "*H. pseudostramineum* C. Müll. Ms. teste Hampe," and he describes the leaves as "sharply acuminate (acute acuminata)."

Dr. Sanio (*Hedwigia*, 1887, Heft IV, V,) who had in his possession also an original specimen from C. Müller, gives a supplementary description of it in which he describes the leaves as "acute."

Thanks to the courtesy of my friend Warnstorf I have recently been able to examine an original (co-type) specimen collected by C. Müller himself in the type locality near Halle a/d Saale ("Dolauor Heide), in May, 1863, and to establish the fact that the leaves are obtusely acuminate, which distinguishes this plant from all forms of *H. fluitans* and *H. aduncum*. On the other hand it is completely separated from *H. stramineum* Dicks. by several characters and also by the dioicous inflorescence. In fact it is not satisfactorily referable either to the subgenus *Harpidium* or to *Caliergon*.

H. PLESISTRAMEUM, Ren. A species closely related to the preceding, from which it differs by its very slender, almost simple stems, by its leaves



Renauld del.
Hypnum Bakeri Ren.
Deer Lake, Polk Co. Wis.

being more crowded, more closely imbricated, oval at base, then lanceolate, and more shortly acuminate, more obtuse at the apex, with cells very flexuous with thicker cell walls. This species, which was collected in 1867 by Mr. W. H. Dall in Alaska, not far from the Yukon river, is described and figured in the Memoire, which the Messrs. Cardot and Theriot are publishing on the Mosses of Alaska, collected on the last expedition of Dr. Trelease.

H. TUNDRAE Arnell in S. O. Lindberg at Arnell's *Musci Asiæ borealis*, is reported from several localities of the region of the Yenisei river in Siberia. The specimen from Verschiniskoje which Dr. Arnell has communicated to me, has the appearance of a *Harpidium* with pinnately branched stem and the leaves more or less homotropous (especially the branch leaves), obtusely-acuminate, with the apex often inflexed, and margin more or less denticulate, especially above the base. The inflorescence is dioicous.

HYPNUM BAKERI n. sp. Tufts very lax, pale-green, below reddish or discolored. Stem slender, without radicles, 8-10 cm. long, prostrate, sparingly branched. Leaves distinct, spreading in all directions; the comal ones ovate or oblong-elliptical, rolled up into an oblong, subacute bud, quite suddenly short acuminate, more rarely subapiculate, obtuse at the top, frequently subcucullate by the inflexed apex, more rarely quite long acuminate upward, at the base more or less contracted, indistinctly decurrent, occasionally plicate, very entire, 1.5-2 mm. long. Costa at the weak base 0.041 mm. wide, extending through three-fourths of the leaf, sometimes shorter, rather slender, dissolved below the middle, or else bifurcate. Leaf areolation pale, rather loose. Cells from middle of leaf linear-hexagonal, eight times as long as wide, or on smaller leaves six times as long as wide; apical cells shorter, subrhombic; alar cells quite numerous, a little larger, slightly dilated, quadrate, not forming auricles.

Type locality: Deer Lake, Polk Co., Wisconsin, U. S. A., in a sphagnum swamp. Coll. C. F. Baker, Nov., 1897.

This plant has a vague resemblance in appearance to the slender depauperate forms of *Hypnum cordifolium*. It differs from them by the form of the leaves, which are above narrowed into an obtuse point usually bent inward, are not cordate at base, and are hardly decurrent; by the cells of the leaves being often colored, numerous, not or hardly dilated, plane, not forming distinct auricles. *H. Bakeri* approaches *H. cordifolium*, from which it differs by the form of leaf apex, by the leaf base, which is not cordate, and by the closer areolation.

It has so far not been possible for me to examine *H. brunneofuscum*, C. Müll., from the peninsula of Tschutschien in Bering Sea, which, judging from the description of the author (Bot. Centralblatt., 1883,) might be a *Pseudocaliergon*.

Finally, this subgenus is established to receive certain species as yet not numerous, but rare, and little represented in herbaria. They are found in boreal or subboreal regions. And it is reasonable to expect that further researches in the vast and incompletely explored regions of northern Asia and America will result in the discovery of other species of this group.